

## PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF ST. PATRICK'S DRIVE AND LANCASTER CIRCLE IN CHARLES COUNTY. THE WORK WILL CONSIST OF INSTALLING COUNTDOWN PEDESTRIAN SIGNALS, AUDIBLE-TACTILE PUSHBUTTONS AND ADA RAMP FOR LANCASTER CIRCLE AND THE WEST LEG OF ST. PATRICK'S DRIVE. ST. PATRICK'S DRIVE IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

## INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA FIVE-PHASE, FULLY-ACTUATED MODE WITH A LEAD EXCLUSIVE-PERMISSIVE LEFT TURN PHASE FOR EASTBOUND ST. PATRICK'S DRIVE. THERE WILL BE AN ALTERNATE PEDESTRIAN PHASE ACROSS THE WEST LEG OF ST. PATRICK'S DRIVE.

## CONTROLLER REQUIREMENTS

AN EIGHT-PHASE, FULLY-ACTUATED CONTROLLER HOUSED IN A BASE MOUNTED CABINET WILL BE USED. A 2-WIRE CENTRAL UNIT, FOUR CHANNEL TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIER AND VIDEO INTERFACE EQUIPMENT WILL BE INSTALLED IN THE BASE MOUNTED CABINET.

## APS NOTES

TO CROSS ST. PATRICK'S DRIVE (WEST LEG)

- WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL BE "WAIT TO CROSS ST. PATRICK'S AT LANCASTER, WAIT."
- WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK, WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE

TO CROSS LANCASTER CIRCLE

- WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL BE "WAIT TO CROSS LANCASTER AT ST. PATRICK'S, WAIT."
- WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK, WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE

- PUSHBUTTONS ARE TO BE LOCATED SO THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18" FROM A 60" X 60" LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
- THE 10" SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM THE FACE OF THE PUSHBUTTON TO THE FACE OF THE PUSHBUTTON, NOT CENTER TO CENTER OF POLE.
- PUSHBUTTON ARROWS ARE TO BE PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
- LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SEC. 4E.09 AND FIG. 4E.2 AND THE NCHRP PUBLICATION, "ACCESSIBLE PEDESTRIAN SIGNALS: GUIDE TO BEST PRACTICE". IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATION UNTIL A DESIGN WAIVER IS OBTAINED, APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.
- ALL APS CENTRAL CONTROL UNITS SHALL BE DELIVERED TO THE SHA SIGNAL SHOP FOR PROGRAMMING AND TESTING PRIOR TO INSTALLATION. CONTACT MR. EDWARD RODENHIZER AT 410-787-7650 TO COORDINATE.

## EQUIPMENT LIST "A"

A. EQUIPMENT TO BE FURNISHED BY THE SHA AND INSTALLED BY THE CONTRACTOR

QUANTITY	DESCRIPTION
NONE	

## EQUIPMENT LIST "C"

C. EXISTING EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE STATE HIGHWAY ADMINISTRATION, 7491 CONNELLEY DRIVE, HANOVER, MARYLAND 21076. THE CONTRACTOR SHALL NOTIFY THE SHA AT (410) 787-7652 AT LEAST THREE DAYS IN ADVANCE OF DELIVERY.

QUANTITY	DESCRIPTION
NONE	

ALL SIGNAL EQUIPMENT TO BE REMOVED AND NOT RETURNED TO THE SHA SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

## CONTACT PERSONS FOR DISTRICT 5 ARE AS FOLLOWS:

MS. KIM TRAN  
ASSISTANT DISTRICT ENGINEER - TRAFFIC  
(410) 841-1019

MR. JOHN MAYS  
ASSISTANT DISTRICT ENGINEER - MAINTENANCE  
(410) 841-1013

MR. MIKE HUBER  
UTILITY ENGINEER  
(410) 841-1039

## CONTACTS FOR OFFICE OF TRAFFIC AND SAFETY

MR. RICHARD DAFF, SR.  
CHIEF - TRAFFIC OPERATIONS  
(410) 787-7630

MR. EUGENE BAILEY  
TEAM LEADER SIGN OPERATIONS  
(410) 787-7676

MR. ROBERT SNYDER  
ASSISTANT DIVISION CHIEF -  
TRAFFIC OPERATIONS  
(410) 787-7631

MR. MIKE STOCKER  
SUPPLY OFFICE  
SIGNAL SHOP WAREHOUSE  
(410) 787-7668

MR. ED RODENHIZER  
CHIEF - SIGNAL OPERATIONS SECTION  
(410) 787-7652

## EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY CONTRACTOR. ALL EQUIPMENT SHALL HAVE CATALOG CUTS SUBMITTED TO THE OFFICE OF TRAFFIC AND SAFETY FOR APPROVAL PRIOR TO INSTALLATION.

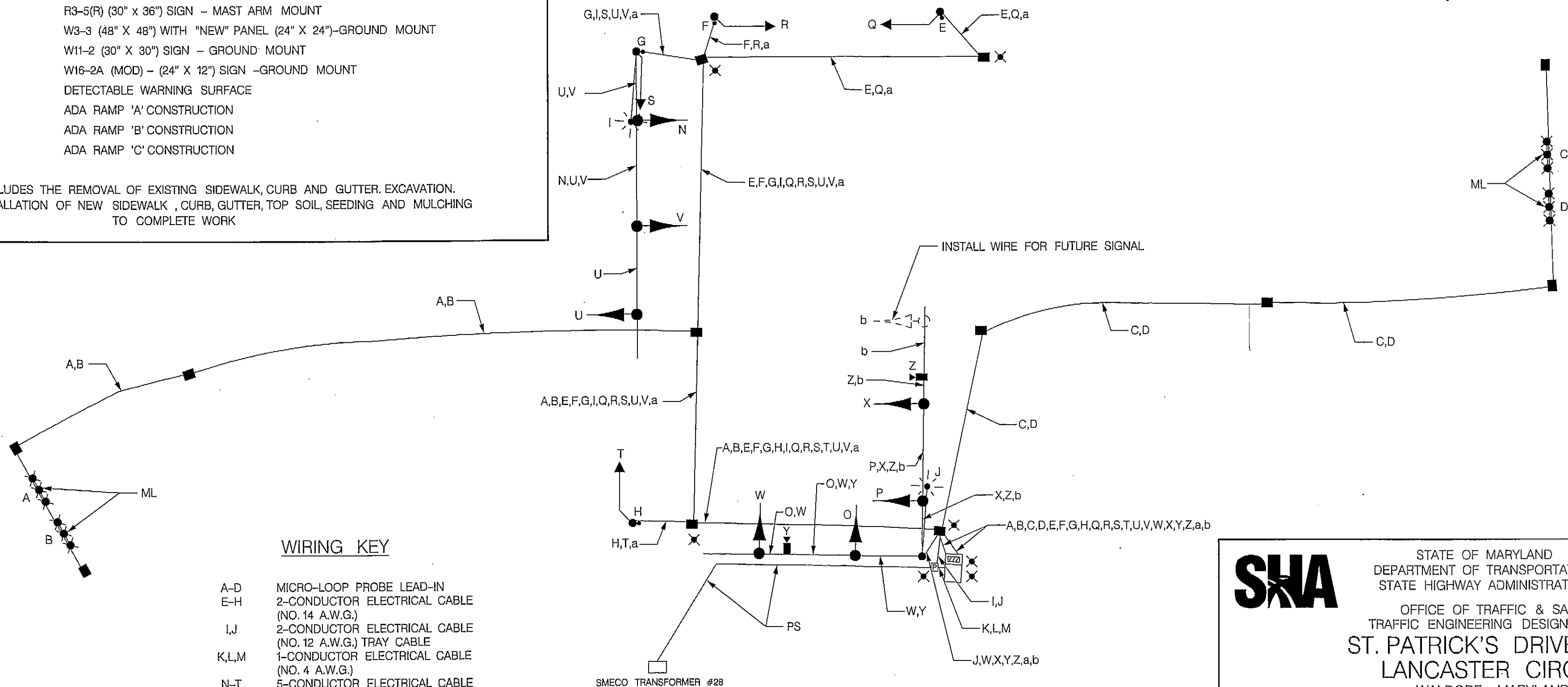
QUANTITY	DESCRIPTION
LS	MAINTENANCE OF TRAFFIC
6 CY	TEST PIT EXCAVATION
415 LF	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS - ANY WIDTH
530 LF	5 IN. HEAT APPLIED, PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING
115 LF	12 IN. WHITE HEAT APPLIED, PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING
115 LF	24 IN. WHITE HEAT APPLIED, PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING
1 EA	CONTROLLER (S-TYPE WITH BATTERY BACKUP) AND CABINET - BASE MOUNT
1 EA	2-WIRE CENTRAL CONTROL UNIT
1 EA	VIDEO INTERFACE EQUIPMENT
1 EA	FOUR-CHANNEL TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIER
22 EA	12 IN. L.E.D. SIGNAL HEAD SECTION
3 EA	8 IN. L.E.D. SIGNAL HEAD SECTION
4 EA	L.E.D. 16 IN. COUNTDOWN PEDESTRIAN
4 EA	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON AND SIGN
10 CY	CONCRETE FOUNDATION FOR SIGNAL
3 EA	BREAKAWAY PEDESTAL POLE
1 EA	27 FT. MAST ARM POLE & 70 FT. MAST ARM
1 EA	27 FT. TWIN MAST ARM POLE & 50 FT. MAST ARMS
2 EA	15 FT. LIGHTING ARM WITH 250 WATT HPSV LUMINAIRE
3 EA	OUT, CLEAN, GALVANIZE, AND CAP TRAFFIC SIGNAL STRUCTURE
12 EA	ELECTRICAL HANDHOLE
10 LF	3 IN. SCHEDULE 80 RIGID PVC ELECTRICAL CONDUIT - TRENCHED
160 LF	3 IN. SCHEDULE 80 RIGID PVC ELECTRICAL CONDUIT - BORED
870 LF	4 IN. SCHEDULE 80 RIGID PVC ELECTRICAL CONDUIT - TRENCHED
220 LF	4 IN. SCHEDULE 80 RIGID PVC ELECTRICAL CONDUIT - BORED
LS	REMOVE AND DISPOSE OF MATERIAL AND EQUIPMENT
2 EA	VIDEO DETECTION CAMERA AND CABLE
70 LF	WOOD SIGN SUPPORTS 4 IN. X 6 IN.
50 LF	WOOD SIGN SUPPORTS 4 IN. X 4 IN.
1 EA	METERED SERVICE PEDESTAL EMBEDDED
15 LF	ELECTRICAL CABLE 1 - CONDUCTOR (NO. 4 A.W.G.)
805 LF	ELECTRICAL CABLE 2 - CONDUCTOR (NO. 14 A.W.G.) TRAY CABLE
290 LF	ELECTRICAL CABLE 2 - CONDUCTOR (NO. 12 A.W.G.) TRAY CABLE
895 LF	ELECTRICAL CABLE 5 - CONDUCTOR (NO. 14 A.W.G.)
865 LF	ELECTRICAL CABLE 7 - CONDUCTOR (NO. 14 A.W.G.)
330 LF	STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
7 EA	3/4 IN. X 10 FT. GROUND ROD
1 EA	RELOCATE EXISTING GROUND MOUNTED SIGN
4 EA	NON-INVASIVE MICRO-LOOP PROBE - SET OF 3 - WITH LEAD-IN CABLE
3 EA	D-3(R) (VAR X 16") SIGN - MAST ARM MOUNT
1 EA	R3-S(R) (30" X 36") SIGN - MAST ARM MOUNT
2 EA	W3-3 (48" X 48") WITH "NEW" PANEL (24" X 24") - GROUND MOUNT
3 EA	W11-2 (30" X 30") SIGN - GROUND MOUNT
3 EA	W16-2A (MOD) - (24" X 12") SIGN - GROUND MOUNT
85 SF	DETECTABLE WARNING SURFACE
* LS	ADA RAMP 'A' CONSTRUCTION
* LS	ADA RAMP 'B' CONSTRUCTION
* LS	ADA RAMP 'C' CONSTRUCTION

\* ITEM INCLUDES THE REMOVAL OF EXISTING SIDEWALK, CURB AND GUTTER EXCAVATION. THE INSTALLATION OF NEW SIDEWALK, CURB, GUTTER, TOP SOIL, SEEDING AND MULCHING TO COMPLETE WORK

## PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11
PHASE 1 & 6 (LEAD)	G	G	G	R	R	R	R	DW	DW	DW	DW
1 & 6 CHANGE (LEAD)	G	G	G	R	R	R	R	DW	DW	DW	DW
PHASE 2 & 6	G	G	G	G	G	R	R	WK	WK	DW	DW
PED CLEAR	G	G	G	G	G	R	R	FLOW	FLOW	DW	DW
2 & 6 CHANGE	Y	Y	Y	Y	Y	R	R	DW	DW	DW	DW
PHASE 4	R	R	R	R	R	G	G	DW	DW	DW	DW
4 CHANGE	R	R	R	R	R	Y	Y	DW	DW	DW	DW
PHASE 4 ALT.	R	R	R	R	R	G	G	DW	WK	WK	WK
PED CLEAR	R	R	R	R	R	G	G	DW	FLOW	FLOW	FLOW
4 ALT. CHANGE	R	R	R	R	R	Y	Y	DW	DW	DW	DW
FLASHING OPERATION	FLY	FLY	FLY	FLY	FLY	FLR	FLR	DARK	DARK	DARK	DARK

## WIRING DIAGRAM



## WIRING KEY

A-D	MICRO-LOOP PROBE LEAD-IN
E-H	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
I-J	2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.) TRAY CABLE
K-L,M	1-CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)
N-T	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
U-X,b	7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
Y,Z	VIDEO DETECTION CABLE
a	STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
ML	MICRO-LOOP PROBE
PS	PROPOSED ELECTRIC SERVICE
⊗	GROUND ROD
⊠	METER SERVICE PEDESTAL

## TRAFFIC CONCEPTS, INC.

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